

We claim:

- 5 1. A continuous process for the epoxidation of olefins by means of hydroperoxide, wherein the epoxidation is carried out in a reactor in which at least one catalyst suspended in a liquid phase is present, and wherein the liquid phase is passed through a device which has openings or channels and is installed in the reactor and the catalyst is retained in the reaction system by means of crossflow filtration when the epoxide containing liquid is
10 separated off.
2. A process as claimed in claim 1, wherein a gas phase which is present in the reactor is also passed through the device which has openings or channels and is installed in the reactor.
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3. A process as claimed in claim 1 or 2, wherein the hydraulic diameter of the device installed in the reactor is from 0.5 to 20 mm.
4. A process as claimed in any of claims 1 to 3, wherein the device installed in
20 the reactor is a bed, a knitted mesh or a packing element.
5. A process as claimed in any of claims 1 to 4, wherein the reactor is a jet nozzle reactor, a bubble column or a shell-and-tube reactor.
- 25 6. A process as claimed in any of claims 1 to 5, wherein the catalyst is present in the form of particles having a mean particle size of from 0.0001 to 2 mm.
7. A process as claimed in any of claims 1 to 6, wherein the epoxidation is carried out at a temperature of from 20 to 100°C and a pressure of from 1 to
30 100 bar.
8. A process as claimed in any of claims 1 to 7, wherein catalyst suspension is taken from or fed into the reactor during the epoxidation.
- 35 9. A process as claimed in any of claims 1 to 8, wherein propene is epoxidized by means of hydrogen peroxide over a titanium-containing zeolite.

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10. An apparatus for carrying out a continuous process for the epoxidation of olefins by means of hydroperoxide as claimed in any of claims 1 to 9, comprising reactor, crossflow filter and container for catalyst suspension.